

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 24 MAY 2006

WIPO PCT

Applicant's or agent's file reference 59572WO003	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/US2005/005818	International filing date (day/month/year) 23.02.2005	Priority date (day/month/year) 01.03.2004	
International Patent Classification (IPC) or national classification and IPC INV. A47L13/20 A47L13/24			
Applicant 3M INNOVATIVE PROPERTIES COMPANY			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of 2 sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input checked="" type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>			
Date of submission of the demand 22.12.2005		Date of completion of this report 26.05.2006	
Name and mailing address of the International preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div> </div>		Authorized officer D'Souza, J Telephone No. +31 70 340-4236	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2005/005818

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-9 as originally filed

Claims, Numbers

1-12 filed with telefax on 21.03.2006

Drawings, Sheets

1/6-6/6 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☒ the claims, Nos. 13-26
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2005/005818

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☒ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☐ not complied with for the following reasons:
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-12 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	2,3,10
	No: Claims	1,4-9,11,12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

D2: US-A-2 320 372 (MCCARTHY AIMEE M) 1 June 1943 (1943-06-01)

D3: US-B1-6 253 408 (FELD UWE ET AL) 3 July 2001 (2001-07-03)

1 Inventive Step - Claim 1 (Article 33(3) PCT)

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D3 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

A head for a strip mop, comprising a hollow dome-shaped body (7) which is attachable at its top to one end of an elongate mop handle (1) and within which a plurality of superposed layers of web material (3) are secured so that a portion of each layer hangs down from the base of the dome-shaped body (7) to provide the cleaning substrate of the mop; and a spacer (5) is provided between adjacent layers of the web material (3) within the dome-shaped body (7).

The subject-matter of claim 1 therefore differs from this known head in that the base of the dome-shaped body has the general form of an equilateral triangle, and the periphery of the spacer has a shape which is similar to, and in the same orientation as, that of the base of the dome-shaped body.

The subject matter of claim 1 is therefore new (Article 33(2) PCT).

The technical effect of the difference in shape of the base is that the corners have an internal angle of 60°.

The problem to be solved by the present invention may be regarded as being to facilitate access to confined or angular areas of a surface such as the corners of a floor.

The solution proposed in claim cannot be regarded as involving an inventive step (Article 33(3) PCT) for the following reason:

Document D2 discloses a triangular head for a strip mop which addresses the problem of wiping dust from corners and other restricted areas (D2 column 1, lines 34 - 35).

A person looking to solve the above problem would apply the teaching of D2 (namely the triangular shape) to the mop of D3 without the exercise of inventive skill.

2 Dependent Claims

The combination of the features of dependent claims 2 , 3 and 10 is neither known from, nor rendered obvious by, the available prior art.

Dependent claims 4 - 9, 11 and 12 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step. All these features are known per se.

21.03.2006

CLAIMS

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1. A head for a strip mop, comprising a hollow dome-shaped body which is attachable at its top to one end of an elongate mop handle and within which a plurality of superposed layers of web material are secured so that a portion of each layer hangs down from the base of the dome-shaped body to provide the cleaning substrate of the mop; wherein the ~~periphery of the~~ base of the dome-shaped body has ^{the general form of an equilateral triangle,} ~~a generally triangular shape,~~ and a spacer is provided between two adjacent layers of the web material within the dome-shaped body, the periphery of the spacer having a ~~generally triangular~~ shape which is similar to, and in the same orientation as, that ~~of the periphery~~ of the base of the dome-shaped body.
2. A mop head as claimed in claim 1, in which the spacer is provided with a downwardly-extending portion, at least in the region of an angle of the ~~generally triangular~~ periphery, to enhance contact in that region between the web material and a surface to be cleaned.
3. A mop head as claimed in claim 2, in which the spacer is provided with a downwardly-extending portion, at least in the region of each angle of the ~~generally triangular~~ periphery, to enhance contact in those regions between the web material and a surface to be cleaned.
4. A mop head as claimed in any one of the preceding claims, in which the spacer forms part of a carrier which is secured within the dome-shaped body and on which the superposed layers of web material are located, the/each layer of web material located above the spacer being held between the periphery of the spacer and the base of the wall of the dome-shaped body.
5. A mop head as claimed in claim 4, in which the/each layer of web material located below the spacer is held between the spacer and the base of the carrier.
6. A mop head as claimed in claim 4 or claim 5, in which the shape of the periphery of

the base of the carrier is similar to that of the spacer but the outer dimensions are substantially less.

7. A mop head as claimed in any one of claims 4 to 6, in which the carrier has at least one upstanding pin that extends through the superposed layers of web material and secures the carrier to the dome-shaped body.

~~8. A mop head as claimed in any one of the preceding claims, in which the periphery of the base of the dome-shaped body has the general form of an equilateral triangle.~~

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8. A mop head as claimed in any one of the preceding claims, in which a peripheral skirt that flares outwards from the wall of the dome-shaped body portion is provided at the base of the dome-shaped body.

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~~10.~~ A mop head as claimed in claim ⁸9, wherein a substantial part of the dome-shaped body is formed from a first material, and the peripheral skirt is formed from a more resilient material.

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~~11.~~ A mop head as claimed in any one of claims 1 to ~~10~~⁹, wherein a substantial part of the dome-shaped body is formed from a first material, and a part of the external surface of the body on a line joining a vertex of the said equilateral triangle to the top of the body comprises a more resilient material.

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¹¹
~~12.~~ A mop head as claimed in any one of the preceding claims, in which the dome-shaped body is formed by moulding from polymeric material.

¹²
~~13.~~ A mop head as claimed in any one of the preceding claims, including an upstanding socket at the top of the dome-shaped body, by which the mop head can be attached to one end of an elongate mop handle.